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U.S. Nuclear Waste Technical Review Board
2300 Clarendon Blvd., Suite 1300
Arlington, VA 22201

Subject: Nuclear Waste Technical Review Board Technical Workshop on the Impacts of Dry-Storage Canister Designs on Future Handling, Storage, Transportation and Geologic Disposal of Spent Nuclear Fuel in the United States

I am pleased to submit the following comments in response to the Nuclear Waste Technical Review Board's (NWTRB) request of the attendees to do so, made at the close of the Subject meeting. The Workshop was an important opportunity for attendees to express their opinions on various aspects of the commercial nuclear power industry's use of existing canister designs for dry storage of used nuclear fuel, and how it will impact the management of this material in the decades to come.

Disposal of Existing Canisters

The final session of the workshop included a discussion of "take-aways" from the proceeding one and one-half days of meetings. One of the "breakout sessions" earlier during Day 2 was a facilitated discussion on direct disposal of large dry storage canisters. During the final session, NWTRB Chairman Ewing expressed skepticism regarding the logic forwarded by others during this breakout session. Others stated that repackaging at commercial nuclear power sites will be expensive, dose-intensive and relatively risky, and therefore the future of used fuel management should include direct disposal. Chairman Ewing's skepticism appeared to reject these arguments as insufficient to preclude repackaging, which in his view, will reintroduce flexibility into future operations of the federal used fuel and high-level waste management system.

I disagree. And, I strongly urge NWTRB to support future efforts to investigate the value of direct disposal of existing canisters. Based upon my experience at commercial nuclear power sites, and my responsibilities for governance and oversight for placing more than 200 large dry storage systems into dry storage (and the reopening of one storage system), I believe the risks of repacking used nuclear fuel, once already located into dry storage, far outweigh the potential benefits. Reactor sites were designed and sited, where they would efficiently produce and distribute, electricity. The facilities were not designed nor sited to package (or repackage) used nuclear fuel for disposal – the language found in the Standard Contract is very clear in that regard, as it defines the Purchaser's (reactor licensee's) responsibility as preparing used fuel for transportation, and not for disposal.

“The Purchaser shall arrange for, and provide, all preparation, packaging, required inspections, and loading activities *necessary for the transportation* of SNF and/or HLW to the DOE facility.” (Emphasis added)

Of themselves, the arguments posited by those in favor of not repackaging used nuclear fuel that repackaging is expensive, dose-intensive and relatively risky to undertake, at first blush, could be construed as strictly “business conveniences.” However, one must look to what lies beyond them, and the principal tenet of every nuclear operator in the U.S. – nuclear safety.

Nuclear safety and the culture it promotes, demands a comprehensive view of all operational activities, considering them in whole, and making decisions on actions recognizing that occupational and public health and safety are tantamount. Before costs and dose are considered, and before probabilities and outcomes are assigned to risk logic diagrams, nuclear safety demands operators consider actions for which risks can be reasonably eliminated up front. Nuclear safety demands that ALARA principals are thoroughly vetted and evaluated, and if radiation exposure can be avoided, actions must be taken to do so. It is clear that excellence in nuclear safety requires evaluation of direct disposal of canisters from a cost, dose and risk perspective, *recognizing that costs may be reduced, dose may be avoided and certain risks may be eliminated by following a direct disposal pathway* for large storage systems.

Programs at Nuclear Energy in DOE have already concluded there may be an opportunity to directly dispose of large, canister-based dry storage systems.¹ I believe the Board should continue to back these efforts, and encourage further research and development in this area. Nuclear safety – the path forward which has the potential for mitigating additional radiation exposure and occupational risk – must direct the U.S.’s management of used nuclear fuel.

I thank the Board for this opportunity to comment.

Cordially,



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1. Of particular interest is the recent work that concludes bentonite backfill can withstand temperatures well in excess of 100°C without losing its swelling properties.